

# Description of a new species in the genus *Diduga* Moore (Lepidoptera: Erebidae: Arctiinae) from Borneo, Malaysia

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**Abstract:** A new species of the genus *Diduga* Moore (1887) is described from Malaysia (Borneo, Sabah): *D. weiweii* sp. nov. Images of adults and genitalia of this new species are provided.

**Key words:** Noctuoidea; Lithosiini; taxonomy; Bornean fauna

马来西亚婆罗洲狄苔蛾属 *Diduga* Moore 一新种记述 (鳞翅目: 目夜蛾科: 灯蛾亚科)

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**摘要:** 本文描述马来西亚 (婆罗洲, 沙巴) 狄苔蛾属 *Diduga* 1 新种: 巍巍狄苔蛾 *D. weiweii* sp. nov., 提供了新种的成虫和外生殖器特征图。

**关键词:** 夜蛾总科; 苔蛾族; 分类; 婆罗洲区系

## Introduction

The genus *Diduga* belongs to the tribe Lithosiini in the subfamily Arctiinae, which was established by Moore (1887). Most members of this genus are distributed in the Oriental Region. To date, 44 species have been described in the world, of which 10 species are found in Borneo: *D. flavicostata* (Snellen, 1879), *D. pectinifer* Hampson, 1900, *D. annulata* Hampson, 1900, *D. trichophora* Hampson, 1900, *D. macroplaga* (Hampson, 1900), *D. barlowi* Holloway, 2001, *D. ciliata* Holloway, 2001, *D. dorsolobata* Holloway, 2001, *D. chewi* Zhao & Han, 2020, and *D. hollowayi* Zhao & Han, 2020 (Bayarsaikhan *et al.* 2020; Snellen 1879; Hampson 1900; Holloway 2001; Zhao & Han 2020).

## Material and methods

Specimens were collected by 220V/450W mercury and DC black light lamps at the Borneo Jungle Girl Camp. Anatomy and preparation of genital sections were performed using

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standard methods (Kononenko & Han 2007). A Nikon D700 camera was used to photograph specimens. Photos of the genitalia slides were taken using the Olympus Photo microscope, Helicon Focus software and further processed in Adobe Photoshop CS6. The type material of this new species is deposited in the collection of Northeast Forestry University, Harbin, China.

## Taxonomy

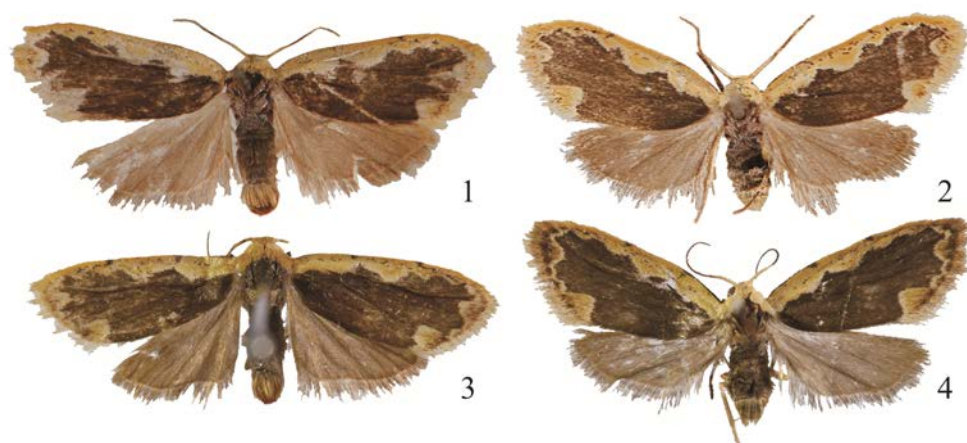
### *Diduga* Moore (1887)

*Diduga* Moore, 1887: 535. Type species: *Diduga costata* Moore, [1887]. Type locality: Sri Lanka (Dickoya).

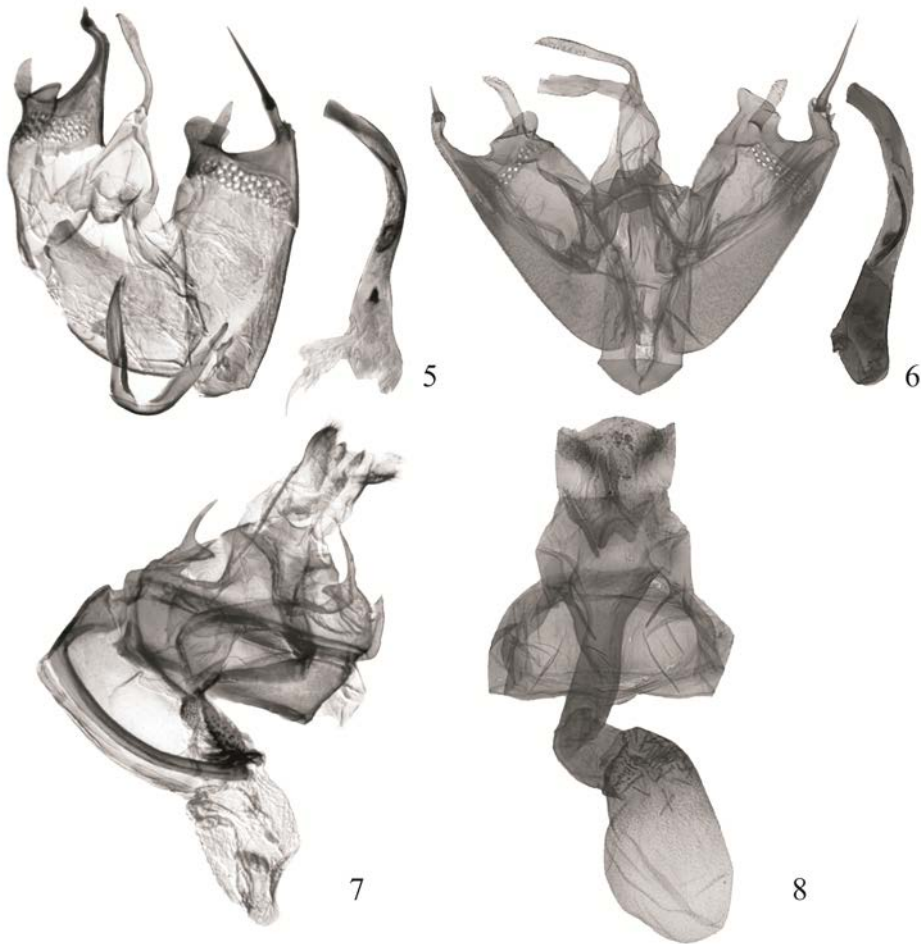
*Androstigma* Hampson, 1893: 13, 82. Type species: *Diduga albicosta* Hampson, 1891. Type locality: India (Nilgiri Plateau).

### *Diduga weiweii* sp. nov. (Figs 1, 2, 5, 7)

Adult (Figs 1, 2). Wingspan 12–13 mm, male rather larger than female. Head, patagium, and tegula yellow. Thorax and abdomen dark brown, and abdomen with pale yellow anal tuft. Forewing with dark brown dorsal ground color; costal margin broad, with small and dark brown scales, inside edge of costal margin region undulating; outer margin region same as that of costa margin region, with a similar right angle near tornus area; antemedial line only displaying a thin dot at costal margin, with a triangular bulge at the inside edge of costal margin region; postmedial line displaying a small dot at costal margin, and forms a small bulge at inside edge of costal margin regions; subterminal line forms a sharp angle at the inside edge of costal margin region; the inside edge of outer margin region with bulge at  $R_5-M_1$ ,  $M_2-M_3$ ,  $M_3-CuA_1$ ; among them the first obviously larger than the others, and with a large, arched sunken region at tornus area; terminal line consisting of brown and yellow scales; fringes yellow. Hindwing smoked brown to greyish brown, diffused small and darker brown grains; fringes brown to smoked brown, with dim yellow at basal part.



Figures 1–4. Adults of *Diduga* spp. 1. *D. weiweii* sp. nov., holotype, ♂; 2. *D. weiweii* sp. nov., paratype, ♀; 3. *D. allodubatulovi*, ♂ (after Bayarsaikhan *et al.* 2020); 4. *D. allodubatulovi*, ♀ (after Bayarsaikhan *et al.* 2020).



Figures 5–8. Genitalia of *Diduga* spp. 5. *D. weiweii* **sp. nov.**, holotype, ♂, genit. prep. No. ztt-032-1; 6. *D. allodubatolovi*, ♂ (after Bayarsaikhan *et al.* 2020); 7. *D. weiweii* **sp. nov.**, paratype, ♀, genit. prep. slide No. ztt-098-1; 8. *D. allodubatolovi*, ♀ (after Bayarsaikhan *et al.* 2020).

Male genitalia (Fig. 5). Uncus slender, slightly swollen at near hooked apex. Tegumen triangular, narrow, frame slightly sclerotized, as long as uncus. Vinculum rather broad and longer than tegumen, thick, moderately sclerotized. Saccus U-shaped, thick. Juxta moderately sclerotized, tongue-shaped, with W-shaped posterior edge. Valva rather flat, broad and asymmetrical, showing trifurcate at terminal part. Sacculus moderately sclerotized, basal part broad and thick, tapering; on left, the process of sacculus strongly sclerotized, tapering cylindrically and wavy, with a moderate spine; on right, the process of sacculus strong sclerotized and triangular, terminal part cylindrical with small teeth row at base, and with a long spine at apex. Costa narrow, weakly sclerotized, right side shorter than left side; left process of costa strongly sclerotized, short and flat willow leaf-shaped; right process of costa dagger-shaped. Harpe strongly sclerotized; left side nail-shaped, and shorter than the process of costa; right side inverted trapezoid. Cucullus wide, with three gridded lines (burr location), and outside edge thick. Aedeagus smooth, curved; caecum short and swollen, 1/8 as long as

aedeagus; carinal plate band-shaped, and extending to middle of vesica; vesica membranous, with a slender, long, sclerotized, arched cornutus and a small cornutus at middle part; and with two short cornuti respectively at subbasal and terminal part.

Female genitalia (Fig. 7). Papillae analis cone-shaped, covering setae. Apophysis posterioris slender and very long; apophysis anterioris very short. Ostium bursae funnel-shaped. 8th segment with sharp horn at both sides of terminal part. Ductus bursae flat and coiled, slightly shorter than corpus bursae. Corpus bursae rugby-ball shaped, with sclerotized signa plate at posterior part.

**Holotype.** ♂, Malaysia, Borneo, Sabah, Mt. Trusmadi, 15–20-II-2019, leg. Huilin HAN, genit. prep. No. ztt-032-1. **Paratype.** 1 ♀, same data as holotype, genit. prep. No. ztt-098-2.

Diagnosis. This new species is externally similar to *D. allodubatolovi* Bayarsaikhan, Li & Bae, 2020 (Figs 3, 4, 6, 8). It can be separated from the latter by following characters (*D. allodubatolovi* in parentheses): the ground color of forewing is rather lighter than *D. allodubatolovi*; the antemedial line displays a thin dot at the costal margin (a distinct dot); the postmedial line displays a small dot at the costal margin (a distinct dot); the inside edge of the outer margin region has bulge at  $R_5-M_1$ ,  $M_2-M_3$ ,  $M_3-CuA_1$ , ( $R_5-M_1$ ,  $M_2-M_3$ ,  $M_3-CuA_1$ ,  $CuA_1-CuA_2$ ); the terminal line consists of brown and yellow scales; the fringes are yellow (the terminal line is obvious, thick and brown; the fringes are brown and yellow); the hindwing is smoked brown to greyish brown (ground color pale brown). In male genitalia, the juxta is W-shaped on posterior edge (smooth arch-shaped); the harpe is narrow (broad); the cucullus has three compacted and gridded lines (two sparse and gridded lines); the right process of sacculus is triangular, with narrow cylindrical terminal part, and a row of small teeth at base (trapezoid, with rather broad cylindrical terminal part, and only a short tooth at base); the carinal plate is smooth at each side (with bending at process part). In female genitalia, the papillae analis are cone-shaped (broad and straight); the apophysis posterioris are very long, apophysis anterioris are very short (equal length); the 8th segment has sharp horns at both sides of the terminal part (without); the ductus bursae is narrow and coiled (broad, hemi-spiral); the corpus bursae is rugby-ball shaped (oval-shaped); the signa plate is long and tapering (rather spread and wide).

Bionomics. These moths fly in February. This species was collected in a tropical rain forest area.

Etymology. The species epithet is dedicated to Chinese entomologist Mr. Weiwei ZHANG.

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